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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/672,486
Filing Date: September 25, 2003
Appellant(s): MOFFATT ET AL.

Julia Church Dierker
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 03/12/2010 appealing from the Office action mailed 10/14/2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:
3, 4, 21-24, 28-30 and 33.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

US 5,837,036	Schleicher et al.	11-1998
US 2002/0071941 A1	Tsuchida et al.	06-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. Claims 3, 21, 22, 24 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Schleicher et al. (US 5,837,036).
2. Schleicher teaches a composition comprising poly(phenylene sulfide) coated on a support, wherein the poly(phenylene sulfide) has a molecular weight of 4,000-200,000, and a melting point of above 250 degree C. The poly(phenylene sulfide) comprises poly(1,4-phenylene sulfide) and/or poly(1,3-phenylene sulfide). (See col. 3, line 8 thru col. 3, line 49 and col. 4, line 34).

Claim Rejections - 35 USC § 103

3. Claims 3, 4, 21-24, 28-30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchida et al. (US 2002/0071941 A1) in view of Schleicher et al. (US 5,837,036).
4. Tsuchida teaches an ink jet recording medium comprising a homopolymer or copolymer compound containing sulfur (abstract) to ensure a high density of printed images, to provide images having high quality, to show only a slight color change and discoloration of printed images even when exposed to ozone gas and is excellent in the long-term shelf life (abstract). Tsuchida further teaches the compound containing sulfur

is coated on a substrate such as paper and plastic film [0031]. Tsuchida does not teach the sulfur containing compound is poly(1,4-phenylene sulfide) or poly(1,3-phenylene sulfide).

5. However, Schleicher teaches a composition that can be coated on a support, wherein the composition comprises poly(phenylene sulfide) (PPS) having a molecular weight of 4,000-200,000, and a melting point of above 250 degree C. The poly(phenylene sulfide) comprises poly(1,4-phenylene sulfide) and/or poly(1,3-phenylene sulfide). (See col. 3, line 8 thru col. 3, line 49 and col. 4, line 34). Tsuchida and Schleicher are analogous art because they are from a similar problem solving area in relation to ozone gas resistance. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the poly(1,4-phenylene sulfide) and/or poly(1,4-phenylene sulfide) of Schleicher with the invention of Tsuchida, and the motivation would be, as Schleicher suggests, to reduce the ozone content in the recording sheet by reacting the ozone with the poly(1,4-phenylene sulfide) and/or poly(1,3-phenylene sulfide) (col. 1, line 65).

6. With respect to the amount of the poly(1,4-phenylene sulfide) or poly(1,3-phenylene sulfide), the experimental modification of this prior art in order to, ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the amount of the poly(1,4-phenylene sulfide) or poly(1,4-phenylene sulfide), and the motivation would be to ensure a high density of printed images, to provide images having high quality, to show only a slight color

change and discoloration of printed images even when exposed to ozone gas. A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney*, 205 USPQ 215.

7. Claims 4, 21-24 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schleicher et al. (US 5,837,036).
8. Schleicher teaches a composition comprising poly(phenylene sulfide) coated on a support, wherein the poly(phenylene sulfide) has a molecular weight of 4,000-200,000, and a melting point of above 250 degree C. The poly(phenylene sulfide) comprises poly(1,4-phenylene sulfide) and/or poly(1,3-phenylene sulfide). (See col. 3, line 8 thru col. 3, line 49 and col. 4, line 34).
9. With respect to the amount of the poly(1,4-phenylene sulfide) or poly(1,3-phenylene sulfide), the experimental modification of this prior art in order to, ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the amount of the poly(1,4-phenylene sulfide) or poly(1,4-phenylene sulfide), and the motivation would be to reduce or control ozone degradation of the coated support. A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney*, 205 USPQ 215.

(10) Response to Argument

Appellants arguments are based on a claimed invention that is directed to a print medium having *increased resistance to gasfade* (i.e., the fading of printed images due to atmospheric pollutants, which degrade or decompose the colorants), and appellants argue, in sharp contrast, Schleicher discloses a process and filter for *removing* organic substances and ozone from gases, thus at the outset, the aim of the Schleicher disclosure is completely different from that of Appellant's invention.

This argument is not persuasive for the following reason(s). Even though Schleicher teaches filter which contains the ozone-binding polymer such as the claimed poly(phenylene sulfide) (col. 3, line 50+), the invention of Schleicher is not limited to filter only. Schleicher also teaches the use of the poly(phenylene sulfide) as a coating applied onto a support material (col. 3, lines 8-49). The claimed effects, i.e. printing functionality and gasfade resistance would implicitly be achieved by a composite with all the claimed elements. Furthermore, Applicant's argument relies upon an intended use limitation for the claimed product. The fact that the claimed article is intended to be employed does not differentiate the claimed article from the prior art article satisfying the claimed structural limitations.

In addition, Appellants argue Schleicher does not teach a melt-coated, discrete, topmost inhibitor layer.

This argument is not persuasive for the following reason(s). Schleicher teaches discrete elements. Schleicher teaches applying the PPS as **a coating or**

impregnation. The rejections above do not rely upon the embodiment related to impregnation. The rejections rely upon the embodiment related to coating. Generally, a “coat” is created by coating a composition onto a substrate; and by definition a “coat” is a **layer** of one substance covering another (**see** the definition of “coat” from the Merriam-Webster Online Dictionary). Schleicher teaches coating a solution of PPS onto a support. After coating it is well established that a PPS coat is formed, and the formed PPS coat meets the claimed discrete topmost inhibitor layer. Schleicher does not expressly teach that PPS coat cannot be formed after coating a solution of PPS.

With respect to Appellant’s argument regarding penetration of the coating in the support: **(1)** The reference of Schleicher does not expressly disclose that all the coating solution penetrates into the substrate without forming a PPS coat. **(2)** It is disclosed in the current specification that the inhibitor is a discrete layer, and may penetrate into the print medium [0019]. Therefore, such disclosure is pertinent to the *embodiment* covered by Appellant’s pending claims; and the claimed invention does not exclude penetration. **(3)** The declaration under 37 CFR 1.132 filed on 06/03/2009 is not commensurate with the recited claims or the disclosure of the current specification because, even though the current specification discloses that the PPS is heated to a temperature above 285 degree C to be coated on to the print medium, there is nothing that teaches in the current specification that the heated PPS is rapidly cooled to below 285 degree C in order to cease the flow of the viscous PPS.

Appellants further argued that Schleicher does not disclose that the support material includes a plain paper, a porous print medium, or a swellable print medium.

This argument is not persuasive because the claimed types of medium include a broad range, thus it is non-limiting. Furthermore, at least the ceramic masses and the organic substance meet the claimed medium.

Appellants also argues that Tsuchida and Schleicher, as a combination fail to teach or suggest forming a melt-coated topmost discrete inhibitor layer on at least one surface of the print medium.

This argument is not persuasive for the following reason(s). Both Tsuchida and Schleicher teach applying the sulfur containing compound as a **coating or impregnation**. The rejections above do not rely upon the embodiment related to impregnation. The rejections rely upon the embodiment related to coating. Generally, a “coat” is created by coating a composition onto a substrate; and by definition a “coat” is a **layer** of one substance covering another (see the definition of “coat” from the Merriam-Webster Online Dictionary). Both Tsuchida and Schleicher teach coating the sulfur containing compound. According to the definition above, after coating it is well established that a sulfur containing compound coat is formed, and the formed sulfur containing compound coat meets the claimed discrete topmost inhibitor layer. Both Tsuchida and Schleicher do not expressly teach that the sulfur containing compound coat cannot be formed after coating the solution.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Betelhem Shewareged/

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